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"the evidence is so complete as to be patent to all" that the quantity of its vegetable products distinguishes it from the earth's surface during the era in which we live. To confound by implication all the periods termed palæozoic, so as to apply to them as a whole what could be true, if at all, only of the carboniferous period, is a fallacious use of a generalization made for a purpose and upon a principle not properly available for the writer's argument. The high esteem in which the character of Mr. Miller is deservedly held by readers in the United States, where his writings are widely circulated, and the respectful manner in which his interesting researches have occasioned his name to be mentioned by authors eminent in the department of geology, give to such of his writings as bear upon the biblical question, peculiar importance with reference to the community at large.

Mr. F. urged the duty of insisting upon the maintenance of regular methods of exposition as well as of investigation, leaving apparent inconsistencies, which are beyond our means of explanation, to be "reconciled" by our successors with the aid of larger accumulations of knowledge than we possess. The progress of science has been retarded by the assumption that every discovery must be immediately proved to be harmonious with certain other portions of our knowledge. A due regard to the sacredness of religious faith and to the natural sensitiveness of the popular mind will secure respectful caution; but it is most consistent with the acknowledged imperfection of human faculties, and at the same time most worthy of the true dignity of science, to assume that ultimately all truths will be found to agree; and meantime, strictly adhering to the canons of evidence, to explore courageously the great field open to us. We ought especially to avoid generalizations which have no sound philosophical principle, or which are framed or applied merely from a desire to appease over-zealous minds ignorant of the facts already ascertained. This obligation is stronger in proportion to the degree of confidence given to the teacher in any case, and also in proportion to the limitation of access to other sources of information.

May 16*th*.

Vice-President Bridges in the Chair.

Letters were read—

From the Imperial Soc. of Naturalists of Moscow, dated May 30th, June 1st, and September 13th, 1853;

From the Kaiserlichen Akad. der Wissenschaften, dated Vienna, 10th Nov., 1853;

From the Royal Academy of Sciences of Stockholm, dated 23d Nov., 1853;

From the K. K. Geologischen Reichenstalt, dated Vienna, 22d Nov., 1853, severally transmitting their publications announced this evening by the Librarian.

From the Royal Acad. of Sciences of Stockholm, dated Nov. 1, 1853;

From the K. K. Geologischen Reichenstalt, dated Vienna, 21st Nov., 1853;

From the Smithsonian Institution, dated Washington, May 10th, 1854; and

From the Portland Society of Nat. History, dated Portland, Maine, 11th May, 1854, severally acknowledging the receipt of the Publications of the Academy.

Dr. Le Conte presented a paper for publication in the Proceedings, entitled "Notes on some new Coleopterous Insects from the Collections of the United States and Mexican Boundary Commission." Referred to Mr. Cassin, Dr. Ruschenberger and Dr. Leidy.

Dr. Le Conte also presented a paper from Mr. Charles Girard, on a new species of Salmonidæ from the Northeastern part of the United States, which was referred to Dr. Le Conte, Dr. Leidy, and Dr. Hallowell.

Dr. Brinton desired to draw the attention of the Academy to a new mode which he had recently devised and practised in the preparation of anatomical specimens, several of which he exhibited.

Anatomical specimens, he said, had hitherto been preserved either in the wet state, or else dried; both plans were open to objections.

If animal tissues be immersed in alcohol, or other preservative fluids, their color becomes blanched, their structure condensed, and consequently their size and shape to a certain degree modified; and at the same time they present inconveniences for demonstration; whilst in the dry state, as for example, in the ordinary dried preparation of our cabinets, the parts are so shrunken and changed, as to convey but an imperfect idea of their primitive relations.

As this shrinkage of the tissues, and the decomposition are dependent most probably upon atmospheric influence, Dr. Brinton stated that it had occurred to him some time since, that should he be able so to exclude the air, as to prevent all evaporation from taking place, he would perhaps succeed in preventing, not only the desiccation of the part, but also its decomposition.

Influenced by this idea, he had commenced a series of experiments, and the success up to this time accompanying them, had led him to draw the attention of the Academy to the subject.

His object being to encase hermetically every portion of his specimen, Dr. Brinton remarked that he had selected for his earlier experiments, a solution of gun cotton in ether, the ordinary collodion. This he applied by means of a brush over every portion of the external surface of his preparation. The ether quickly evaporating, a thin film of the cotton was deposited upon and in all the interstices of the tissue. This process was repeated until a layer of sufficient thickness had been obtained; successive coatings of copal and shellac varnishes were then applied, so as to render to the preparation a certain degree of firmness and stiffness.

But it soon became evident to him that collodion was not entirely suited for the generality of objects, especially for those of any considerable bulk. It possesses too slight a degree of tenacity, and is liable to become easily chipped and fissured.

It was necessary, therefore, to employ some other material, and a solution of gutta-percha in benzole was selected; this was applied in a similar manner over the object to be preserved. The pellicle left by the evaporation of the benzole was tenacious, dense, and could be increased to any desired thickness. Single layers were transparent, suiting admirably for layers of fasciæ. For the encasement of the adipose tissue, collodion was still employed.

The thick coating, however, which it was considered necessary to apply upon the muscular mass, was of course opaque; hence, it became of importance to resort to an artificial coloring process, and for this purpose, collodion stained with the wood of the Pterocarpus santalinus, (the ordinary red saunders,) was found to answer admirably. The color resulting imitated closely that of fresh muscle. The preparation was then completed by the repeated application of copal and shellac varnishes.

Dr. Brinton explained to the Academy, that he did not present his specimens as tried and perfected preparations, for as yet they had attained the age of but some twenty days; but merely as evidences of the application of a new principle to the preparation of anatomical objects. Time was required to test its value.

Whether or not any internal decomposition could take place in consequence of the retention of a residual amount of air, Dr. Brinton could not state; but he doubted that such would be the case, to a degree sufficient to affect the contour of the specimen. Should, however, such a result ensue with regard to the specimens upon the table, still his experiments had shown that the process was applicable to any tissues which had been injected or soaked with a solution of the chloride of zinc, or any other antiseptic. Here decomposition would be impossible, and the gutta-percha was certainly sufficient to prevent the shrinking consequent on evaporation.

Dr. Brinton then stated that he was still experimenting, and had succeeded in procuring a colorless solution of gutta-percha in benzole and in chloroform, which would supersede the use of the collodion for the adipose matter. These transparent solutions would doubtless be applicable to the preparation of dissections of the nervous system, and to pathological structures. He stated also that he thought possibly an extension of this principle might hereafter be made subservient to the preservation of any fresh animal tissue. Further results would be submitted to the Academy.

May 23*d.*

Vice-President Bridges in the Chair.

Letters were read—

From Dr. Wm. Wirtenweber, dated Prague, 30th Oct., 1853, transmitting several of his works, acknowledged this evening.

From Dr. W. D. Hartmann, dated West Chester, Pennsylvania, May 16, 1854, acknowledging the receipt of his notice of election as a Correspondent.

Dr. Le Conte presented a paper by Mr. C. Girard, and intended for publication, entitled "A list of North American Bufonides, with diagnoses of new species." Referred to Dr. Hallowell, Dr. Leidy, and Mr. Hanson.

Dr. Leidy called the attention of the members to specimens of four vertebræ of a huge extinct saurian, from near Greenville, Clark Co., Arkansas. They had been kindly loaned by Mr. W. F. Roberts, an agent of the Arkansas Mining Company, who had discovered them with numerous others. Dr. L. stated, that in his late visit to St. Louis, Mr. Albert Koch, the industrious collector of fossil remains, had exhibited to him a collection of bones from the same State, and apparently of the same animal, which he was on the eve of sending to Berlin.

The specimens on the table are remarkable for the robust transverse processes, which project laterally from the lower part of the body, and terminate in a large facet for the articulation of a rib. The bodies are cylindroid, and are terminated by slightly concave or nearly flat articular surfaces. The sides of the body are moderately concave, and have an acute margin at the articular surfaces. On each side of a median prominence of the under side of the body a large vascular foramen exists.

These vertebræ resemble those of the *Cimoliasaurus magnus*, from the green sand of New Jersey, described previously in the Proceedings of the Academy,* but in that the large transverse process is cylindrical, while it is compressed cylindroid in the Arkansas saurian, and probably this latter belongs to a distinct genus, for which the name *Brimosaurus grandis* is proposed. The bones are embedded in a hard limestone with mollusca, and they probably belong to the cretaceous or to the eocene period. One of the most perfect of the vertebræ presents the following measurements :

Length of the body	3¾	inches.
Depth of articular surfaces . . .	5	"
Breadth of " " . . .	6	"
Length of the spinal arch . . .	3	"

References of Plate II.

Figs. 1—3, Brimosaurus grandis.
" 4—6, Cimoliasaurus magnus.

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* Vol. v. p. 325.